

What is claimed is:

1. A method of treating an arrhythmia of the heart comprising the step of cooling selected cardiac nerves.
2. The method of Claim 1, wherein the selected cardiac nerves include nerves associated with a posterior surface of the left atrium of the heart.
3. The method of Claim 1, wherein the selected cardiac nerves include sympathetic nerves proximate the Ligament of Marshall.
4. The method of Claim 1, wherein the step of cooling has a duration of 15 to 120 seconds.
5. The method of Claim 1, wherein the step of cooling is accomplished at a temperature of approximately –80 degrees Celsius.
6. The method of Claim 1, wherein the selected cardiac nerves are approached endocardially.
7. The method of Claim 1, wherein the selected cardiac nerves are approached epicardially.

8. The method of Claim 1, wherein the selected cardiac nerves are stunned so that nerve signal conduction is temporarily inhibited.

9. The method of Claim 1, wherein the selected cardiac nerves are ablated so that nerve signal conduction is permanently inhibited.

10. The method of Claim 1, further comprising the step of cold mapping cardiac tissue prior to the step of cooling.

11. A method of treating an arrhythmia of the heart comprising the step of cooling selected cardiac nerves to a temperature below -30 degrees Celsius until nerve signal conduction in the selected cardiac nerves is at least temporarily inhibited.

12. A method of treating an arrhythmia of the heart comprising the step of:
epicardially approaching a selected region of the heart using with a cooling device;
placing the cooling device on the surface portion of the heart; and
using the cooling device to cool selected cardiac nerves to a temperature below -30 degrees Celsius.